




BioConnect  Iowa

2020
**ANNUAL
REPORT**





Like all of society, Iowa Innovation Corporation's / BioConnect Iowa's activities in 2020 were disrupted by the COVID-19 pandemic. Through the dedication of staff and partners during this challenging year, significant steps were taken towards delivering on the organization's mission to foster the growth of Iowa's bioscience sector.

First, renaming and rebranding of the corporation was completed to form BioConnect Iowa (BCI). BCI adopted the tagline "We move ideas forward." The corporation believes its new name and associated logo captures well the bioscience focus adopted in 2018 and aligns with its mission. A new website (bioconnectiowa.org) was also launched. We are grateful to deNovo Marketing for the work they did on this project and the outstanding results.

Second, in September, BCI was notified that it received a three-year award from the U.S. Economic Development Administration (EDA) under the Build to Scale (B2S) program (eda.gov/oie/buildtoscale/). This grant, worth over \$1.2M over the three-year period, will allow BCI and its partners on the project, Iowa State University (ISU) Startup Factory and VentureNet Iowa, to develop and launch a new startup accelerator program and online resource guide.

Third, to continue building on momentum from FY 2020, BCI augmented the FY 2021 state appropriation of ~\$1.08M to ISU and University of Iowa (U of I) for bioscience efforts with an additional \$1M (\$750K to ISU; \$250K to U of I), enabling expansion of both universities' efforts. This one-time reallocation of funds that the Iowa Economic Development Authority set aside for BCI under the current funding contract demonstrates BCI's ongoing recognition of the importance of these university partnerships. An increased state appropriation will again be sought for FY 2022.

BIOSCIENCE PLATFORMS

BIOBASED CHEMICALS / PRODUCTS PLATFORM (ISU PARTNERSHIP)

This platform received most of the funding at ISU during FY2020. Over the past year, progress has been made on several fronts.

ISU Chief Technology Officer (CTO) Sundeep Vani and BCI Commercial Officer Steve Smith serve as advisors for a recently founded ISU spin-off company, SoyLei Technologies (soylei.com), which has licensed technology developed at ISU in the labs of Dr.'s Eric Cochran and Chris Williams. SoyLei's InvigoSoy Asphalt Paving Rejuvenator outperforms the petroleum-based competition by multiple measures. InvigoSoy (along with related technologies) has the potential to provide a sizeable new market for soybeans and a biorenewable source of this asphalt component. SoyLei is commercializing this technology through a marketing and sales partner and will have revenue during their first year of operation.

In late 2020, the U.S. Department of Defense announced an \$87M, seven-year award to the "BioIndustrial Manufacturing and Design Ecosystem" (BioMADE) for a new Manufacturing Innovation Institute to be headquartered at the University of Minnesota. ISU is a member and has played an important role in this initiative, coordinating discussions with several industry partners (Cargill, Novozymes, ADM, Genomatica, White Dog Labs). This award will provide the opportunity for ISU researchers to compete for funds for commercial development projects, with funding from the state and BCI leveraged as match.

My team and I have worked with BioConnect Iowa since formation of SoyLei in early 2020. They've been helpful guiding us through the process of starting a new business. Their expertise and counseling have brought tremendous value to our start-up by always making sure that we found the answer to our problems. Their set of skills and experiences have proven to be exactly what we needed.

Nacu B. Hernandez, PhD
CEO, SoyLei Technologies

PRECISION & DIGITAL AGRICULTURE (ISU PARTNERSHIP)

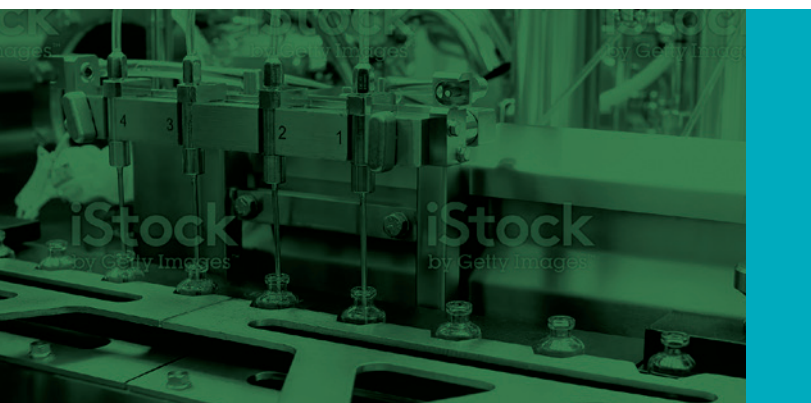
In 2019, ISU and BCI engaged a market research company to help better understand the research priorities of leading companies in this sector, as well as to gain perspectives on the commercial landscape. This project was completed in early 2020. Several identified opportunities align well with ISU research strengths, including: (i) development of insect and disease models that can be used to optimize control strategies, (ii) sensor technologies and integration of sensor output data with other field monitoring/management data, and (iii) potential creation of a service that can help provide field trial support for ag startups and facilitate industry connections.

Following up on the recommendations from this study requires having a platform CTO in place. Funding from BCI in FY 2021 enables this, and CTO recruitment is ongoing.

Finally, a seed grant program was initiated, and in November 2020, two grants were awarded for ISU researcher-industry collaborations.

MEDICAL DEVICES (U OF I PARTNERSHIP)

Jon Darsee (U of I Chief Innovation Officer, with operational responsibility for this platform) is using the FY 2021 BCI funding to: (i) increase awareness and customer base across the state of UI Ventures, UI Research Foundation, Protostudios and MADE, (ii) help fill a one-year gap in funding for support of early-stage product development research that falls outside the scope of typical research or commercial funding mechanisms, and (iii) fund a seed program for nurses in the UI Health Center that supports development of creative solutions to problems they see every day in clinical practice.



VACCINES AND IMMUNOTHERAPEUTICS (ISU PARTNERSHIP)

BCI funding in 2020 has enabled hiring of a platform CTO at ISU. In November, Mike Roof was named ISU Vaccines and Immunotherapeutics Platform CTO. Mike is currently engaging with faculty at ISU and the U of I to identify commercially promising projects and collaboration opportunities across the universities. The potential for such projects was demonstrated during 2020 with the award of \$2M from CARES Act funding being made by the state to the ISU Nanovaccine Institute along with U of I and startups to collaborate on development and manufacture of second-generation COVID coronavirus vaccines.

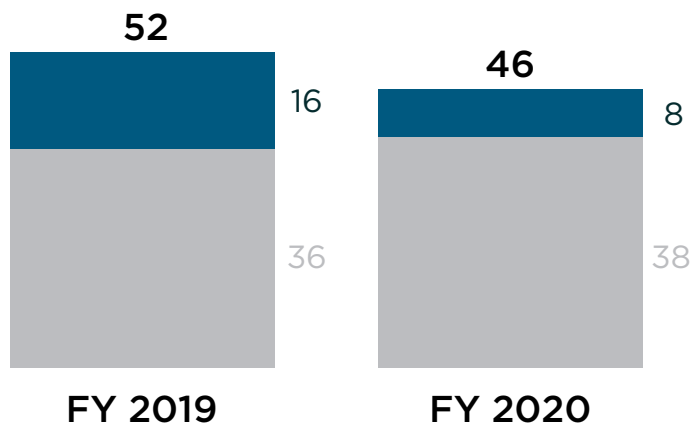
The platform seed grant program initiated in 2019 continued with one additional award made to-date for a collaborative project with LEAH Labs to investigate the use of targeted cell therapies for treatment of canine cancers.

SMALL BUSINESS INNOVATION RESEARCH (SBIR) AND TECHNOLOGY TRANSFER OUTREACH (STTR) PROGRAM

The SBIR/STTR Outreach Program provides support for innovative Iowa businesses seeking federal grants through the Small Business Administration's SBIR and STTR programs. This support is not restricted to bioscience companies. FY 2020 was another successful year for the SBIR/STTR Outreach Program on several fronts:

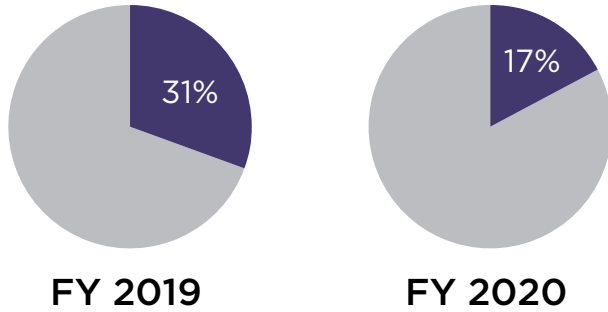
Forty-six applications were supported between July 2019 and June 2020, with eight companies receiving eight awards, totaling \$6.3M during this period.

Breakdown of Iowa SBIR/STTR Outreach Program Applications, FY2018 and FY2019



Phase I awards were won by 3D Health Solutions, Legov Systems Group, Senseion Therapeutics and NeoVaxSyn, while Infondrian, Omni-Life Health Tech Solutions, Viewpoint Molecular Targeting and Parametric Studio received grants for Phase II projects.

Iowa SBIR/STTR Outreach Program Percentage of Applications Receiving Awards, FY2019 and FY2020

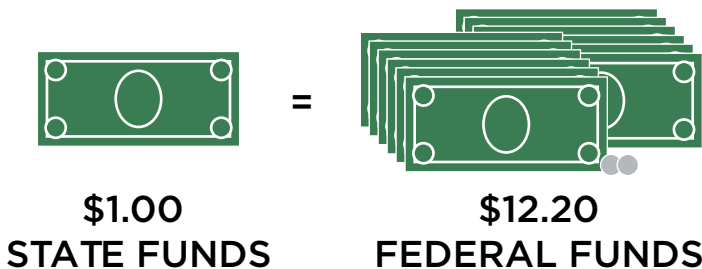


The total number of applications in FY 2020 was down from recent years (see Table 1), primarily believed to be due to the impact the COVID-19 pandemic had on activities at all research institutions during the last ~four months of FY 2020. This belief is supported by the return to historical norms seen during the first half of FY 2021. A success rate of 17% is also towards the low-end of what has been seen over recent years.

Table 1. Iowa SBIR/STTR Outreach Program Performance, 2017-2020

| YEAR* | # AWARDS OBTAINED | APPLICATIONS SUBMITTED | TOTAL \$ AWARDS |
|-------|-------------------|------------------------|-----------------|
| 2020 | 8 | 46 | \$6.3M |
| 2019 | 16 | 52 | \$4M |
| 2018 | 19 | 86 | \$7M |
| 2017 | 10 | 69 | \$5.8M |

Iowa SBIR/STTR Outreach Program, Leveraged Federal Funds FY2019



\$6.3M in awards represents a \$12.20 return in federal funds for every \$1 invested by the state into application support and award matches, which is an all-time high and double what was seen in either FY 2018 or FY 2019. The reason for this is the increasing number of Phase II awards (typically much larger than Phase I awards) now being obtained by Iowa companies. BCI believes this is a natural progression of a successful program. Following initiation several years ago of the financial support program, the number of applications has increased. The combination of more applications and improved quality due to the technical support part of the program helped generate an increase in Phase I awards. The past few years brought a success rate of >15%-30%, compared with an average national success rate of ~15%. BCI is now seeing an increase in Phase II applications and awards, which resulted from successful execution of Phase I projects.

“We’ve appreciated support from BioConnect Iowa towards commercialization of our patient safety-centered software. The grant assistance program played a vital role in helping Infondrian secure a Phase I STTR award. The STTR matching program helped enable the Infondrian team to perform market analysis, IP evaluation, and work with a senior business advisor for commercialization.”

Junyi Xia, Ph.D.
CEO, Infondrian LLC

SBIR/STTR “AMBASSADOR” PROGRAM

This program was developed during 2019 to increase knowledge about the federal SBIR and STTR funding and state outreach programs across the state, by providing education and supporting materials to key entrepreneur support groups across the state. This program was rolled out as planned during 2020, although many of the engagements with the entrepreneur support groups took place remotely.

IOWA GO-TO-MARKET (G2M) PROGRAM

In June 2020, BCI submitted a proposal to the U.S. EDA for funding as part of their Build to Scale program. In September, BCI's was notified that it received one of 52 awards made in 2020, from over 600 grant applications. The ~\$1.2M in total funding for the three-year program consists of ~\$500K from the U.S. EDA, ~\$450K in pro bono services, ~\$250K in in-kind BCI and ISU contributions and \$15K of State support. The program components aim to help address two gaps in ecosystem support that particularly impact research-driven high-tech startups, which includes many in bioscience sectors. There is a broad consensus that many such companies could benefit from (i) additional structured entrepreneur support programs that follow the existing early-stage accelerators in the state, and (ii) improved connections with service providers that can help founders in multiple ways, including developing their businesses, securing IP and obtaining funding.

Funding from the grant is being used by BCI and its project partners, ISU Startup Factory and VentureNet Iowa, to support two initiatives that are believed to be able to help address the ecosystem gaps described:

G2M ACCELERATOR

A new accelerator program, with the same name as the funded project, is being launched in 2021 (iowag2m.org).

This program targets existing Iowa startup companies that meet two criteria. First, the program is designed for companies developing technology-driven innovative products or services. Industry sectors typically represented will include (but not be limited to) biosciences, ag-tech, advanced manufacturing and tech/software. Second, the program targets startups that already received entrepreneurial guidance, preferably through a formal program.

The program will be run by ISU Startup Factory personnel, with the application process run by VentureNet, modelled after what they developed and use for review of applicants for State Innovation funding. As of December 2020, recruitment of the inaugural cohort is ongoing.

One unique component of this program is that over 10 firms in areas like legal, finance and branding/marketing signed up to be part of the program through delivery of pro bono services to cohort companies. BCI believes this will have significant value for companies at the stage of development targeted by the program.

ONLINE RESOURCE GUIDE

Multiple online resource guides exist in Iowa, but none are focused on the needs of research-driven, high-tech startups. In partnership with VentureNet Iowa, BCI is developing a guide that will direct these companies (with unique characteristics of generally being IP-intensive, often with long product development timelines and significant pre-revenue capital needs) to resources from across Iowa with experience working with these types of companies.





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